AD-A283 046

CUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	April 1993	FINAL

4. TITLE AND SUBTITLE
CHEMICAL WEAPON PROLIFERATION IN THE MIDDLE EAST: TIME FOR A U.S. REGIONAL...

5. FUNDING NUMBERS

6. AUTHOR(S)
WILLIAM B. HORNE II
COL, USAF

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
AIR WAR COLLEGE
325 CHENNAULT CIRCLE
MAXWELL AFB AL 36112-6427

8. PERFORMING ORGANIZATION REPORT NUMBER
Unnumbered AWC research paper

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
N/A

10. SPONSORING/MONITORING AGENCY REPORT NUMBER
N/A

11. SUPPLEMENTARY NOTES
PAPER IS WRITTEN TO FULFILL ACADEMIC RESEARCH REQUIREMNTS FOR AN IN-RESIDENCE SENIOR SERVICE PROFESSIONAL MILITARY SCHOOL.

12a. DISTRIBUTION/AVAILABILITY STATEMENT
APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*

14. SUBJECT TERMS
Chemical, Proliferation, Time, Regional, Chemical

15. NUMBER OF PAGES
24

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
UNCLAS	UNCLAS	UNCLAS	UL

AIR WAR COLLEGE

AIR UNIVERSITY

CHEMICAL WEAPON PROLIFERATION IN THE MIDDLE EAST: TIME FOR A U.S. REGIONAL CHEMICAL DISARMAMENT STRATEGY

BY

WILLIAM B. HORNE II

COLONEL,USAF

A RESEARCH REPORT SUBMITTED TO THE FACULTY

IN

FULFILLMENT OF THE CURRICULUM

Advisor: Colonel Edward V. Mangis

MAXWELL AIR FORCE BASE, ALABAMA

April 1993

CHEMICAL WEAPON PROLIFERATION IN THE MIDDLE EAST:

TIME FOR A U.S. REGIONAL CHEMICAL DISARMAMENT STRATEGY

"Our experience in the Gulf War demonstrated that we cannot be sure when or where the next conflict will arise; that the world must respond to straightforward aggression; that international coalitions can be forged, though they often will require American Leadership; that the proliferation of advanced weaponry represents a clear, present, and widespread danger; and that the United States remains the nation whose strength and leadership are essential to a stable and democratic world order."

1993 U.S. National Security Strategy

INTRODUCTION

The end of the cold war and the emerging new international systems have given each nation and region of the world new challenges in their desire to maintain peace and long term stability. This is especially true given the tangible impacts the bipolar conflict has had on each region of the world.

Each nation brings a set of capabilities to the world order that it inherited from the side of the cold war camp to which it belonged. It is precisely this development that confronts the Middle East region as it pursues a path toward establishing a framework for a lasting peace. Given the historical and continuing rivalry that exists between Israel and its Arab neighbors and the continuing distrust that some of the Arab and other non-Arab neighbors share among themselves, the potential for greater instability exists in the future.

With deterrence politics, the Cold War produced an unprecedented arms race world wide and gave Middle East countries increasingly lethal capabilities to resolve their disputes. The Iran-Iraq War very clearly showed that superpowers no longer possessed the exclusive capability to use weapons of mass destruction should a lesser developed nation-state choose to do so. Although Iraq did not use its chemical weapon (CW) capability in the Gulf War, the U.S. led coalition forces prepared to defend itself against it. It is in response to this threat to regional and world peace that

the U.S. must aggressively pursue the benefit of chemical weapon disarmament and direct its immediate attention to the Middle East region. It is here where Arabs and non-Arab countries may wrongly turn to the false security chemical weapons may provide them in their quest to solve regional disputes using military means.

Given this background, this paper argues that U.S. national security interests are better served in the Middle East when the region abides by a protocol that limits the development, production and use of chemical weapons. What follows is a discussion of historical Middle East involvement with chemical weapons, U.S. national regional and security interests and objectives, the regional dangers and causes of chemical weapon proliferation(CWP) and a proposed eclectic U.S. chemical weapon disarmament strategy to deal with CWP.

HISTORY OF CHEMICAL WEAPONS IN THE MIDDLE EAST

Over the past 30 years, many Middle East countries have obtained credible operational experience in the development, employment and use of chemical weapons in armed conflict. The six categories of chemical weapons that have received the most attention are listed below along with their major distinguishing characteristics.

1. Nerve gases. Cololess, odorless, tasteless. They attack the nervous system and disrupt bodily functions. They are the most lethal toxins.
2. Blister agents. Liquids that burn and blister the skin after exposure. Mustard gas is the most well known example.
3. Choking agents. Highly volitile liquids that irritate and injure the lungs when breathed. Death comes from choking.

4. Blood agents. Enter body through respiratory system then interferes with body's use of oxygen causing death.

5. Control, tear and harassing gases. Non-lethal sensory irritants that cause tearing, burning of the skin, nausea and vomiting.

6. Toxins. Highly Toxic biologically produced chemical substances which act through injestion or inhilation. Often characterized as biological weapons. (2:60-61)

Brief country profiles will highlight the region's experience with chemical weapons since World War II.

EGYPT

Historically, the possession and use of chemical weapons in the Middle East began with Egypt in the 1950's and 60's. During this period, Egypt conducted imitial research to acquire a long range ballistic missile capability and nuclear weapons. (2:141) It is believed that acquired stocks of mustard gas from British inventories left in the desert following World War II (2:145). In the 1960's, Egypt developed its own capability to produce mustard gas and other chemical weapons. During the Yemen Civil War, Egypt used poison gas against the North Yemen Royalist faction. (2:141) There are no reports of Egypt using chemical weapons since the Yemen conflict.

Since the 1960s, Egypt's CW program consists of continued research and development and stockpiling. The October 1973 war highlighted Egypt's approach when Israel captured much of its assets. (2:141). Inspite of the war's outcome, Egypt has retained the capability to produce chemical weapons and has done so using variants of former USSR missile hardware and bomblet munitions. In the late 1980's, Egypt

officials assigned to the embassy then in Washington, were involved in illegal activities designed to export chemicals and equipment that would be used to build chemical weapons (2:143). This was followed up by another incident in June 1990, where it was reported that Egypt had reached an agreement with the People's Republic of China to improve their missile delivery capability. According to these reports, Egypt's initial reliance on FROG-7 and SCUD B missile technology has now been replaced with the Chinese SILKWORM anti-ship missile, improved version of the SCUD and Egypt's SAQR surface to surface rockets. The open press has also alleged that Egypt worked with Iraq before the Gulf War as well. Inspite of all this activity, President Mubarak has denied that Egypt has a long range missile development effort underway. Israeli sources believe Egypt is quietly conducting research at an undisclosed location north of Cairo.

IRAN

Iran is a relatively newcomer to the world of chemical weapons. Iran's serious involvement with chemical weapons began in 1983-84. (2:83) During that time Iran began building a CW production capability. Using former West Germany's technical assistance, Iran produced enough lethal chemical weapons to build its own weapons in 1986-87. (2:83) Iran sporadically used mustard gas and blood agents in bombs and artillery shells against Iraq in 1987 and 1988. (2:83) The Iranian use of these weapons was no match for the better equipped and trained Iraqi forces. Following the Iran-Iraq war, Iran followed Egypt's lead and built its weapons capability around a surface to surface missile regime that employs Chinese, German and North Korean built hardware. Iran's President Hashemi Rafsanjani has characterized Iran's approach to

chemical weapons as follows: "Chemical and biological weapons are a poor man's atomic bomb and can easily be produced. We should at least consider them for our defense. Although the use of such weapons is inhuman, the war taught us that international laws are only scraps of paper." (2:83) It is important to note that Iran has signed the Geneva Protocols of 1925, prohibiting the use of poison gas.

IRAQ

Iraq has used chemical weapons more than any other Middle East country. (2:61) Like Iran, Iraq has also signed the Geneva Protocols of 1925, prohibiting the use of poison gas. Some experts believe Iraq's initial experience with chemical weapons stemmed from Egypt's use in the 1960's. In the 1970's, Iraq got small amounts of chemical weapons from the former USSR. Weapon experts believe that Iraq may have used poison gas shells or bombs against Kurdish rebels in 1973-75, but it was not confirmed. However, Iraq did use helicopters bought from the U.S. to use lethal agents against Kurdish civilians in 1988. (4:18) Weapon experts also agree that Iraq had weaponized mustard gas for use by mortars and artillery by the late 1970's. (2:62) Under the guise of building a major "pesticide" blending complex, Iraq was involved with many commercial firms in the U.S. and Western Europe order to create a weapons production capability. Many of these initiatives did not succeed. However, the West German and U.S. governments confirmed that many companies had helped Iraq in its production efforts. (1:64) This gave Iraq an advantage before the start of the war with Iran. Iraq increased its advantage through continued weapons development and production. Iraq's resolve to use chemical weapons partially explains why the coalition forces considered Iraqi CW capability a credible threat. Iraq's SCUD missile attacks

against Israel also demonstrated its affinty toward ballistic missile technology as a delivery system for both conventional and chemical warheads.

By 1981-82, Iraq had produced enough gas to use against Iran in attacks against Dezful and Sush in Mar 82 and Basra and Mandali in autumn and winter 82. (2:65) In July I, 1988, "The Iraqi foreign minister admitted that Iraq had used chemical weapons in its war against Iran, but said Iran had used them first." (14:45) Iraq, like Iran, says it will only support the idea of destroying its CW capability if Israel eliminated its nuclear weapons and signed the Nuclear nonproliferation Treaty NPT). However, military action during the Gulf War and inspection visits have significantly reduced Iraq's capability to produce chemical weapons. Inspite of this development, Iraqi president Sadaam Hussein's defiance of UN restrictions suggests that Iraq's national leadership still has the will to produce chemical weapons if given the chance.

ISRAEL

While Israeli nuclear program receives widespread coverage in the media, its CW program remains difficult to assess. In general terms, Israeli involvement with CW is thought to have begun in 1982. Many U.S. experts believe Israel developed its CW capability at Dimona in the Sinai. (2:26) Relying on internally generated technical expertise, many believe Israel has conducted extensive laboratory research in gas warfare and defense. During the Gulf War, Israel displayed its defensive capabilities by the rapid distribution of gas masks given to every citizen in response to Iraqi SCUD missile attacks. Israel, like its major adversaries, has developed a variety of delivery systems (e.g., bombs, rockets and missiles) that could easily incorporate the use of

chemical weapons in war. There are very few open sources that provide any information about Israel's CW capability.

LIBYA

Libya initiated their successful chemical weapons program in the mid 1970's. (2:153) Like Iraq, Libya is believed to have benefited from Egypt benevolence after the Egypt-Israeli 1973 War. Although there is much discussion about Libyan CW test in the desert in 1984-85, many agree Libya most probably used poison gas against Chad during the 1986-87 Conflict. (2:154) Some experts say this use of mustard gas was not particularly effective. Since then, Libya has established a network of Dutch, former East and West German, Japanese, North Korean and former Soviet support, who have provided an array of chemical processing and technical services. Libya's CW effort is conducted at the Rabta Complex, 40 miles south of Tripoli. (2:154) This facility is characterized as perhaps the largest chemical weapons plant outside the former Soviet Union. (2:155) Over the past 20 years, Libya has received technical assistance from the former Soviet Union and western companies. There is no doubt that Libya wants to exploit the military capability that chemical weapons represent.

SAUDI ARABIA

Saudi Arabia is a signatory to the NPT. It has signed a statement saying the nuclear and chemical warheads would not be obtained or used with their Chinese built surface to surface missiles. (2:113) The Saudi government has not permitted the missiles to be inspected, but most experts report there has been no reason to doubt their claim. However, it is noted that Saudi Arabia has all the chemical processing plant

capabilities and facilities needed to produce chemical weapons should they ever decide to do so.

SYRIA

Syria entered the CW competition after the October 1973 War. Experts believe Syria's clashes with Israel in 1982 triggered a major effort to develop a chemical weapons capability. (2:145) Like its other Arab neighbors, Syria's CW capability is in mustard gas stocks and nerve gas. The primary weapon delivery systems are former Soviet built surface to surface FROG-7 and SCUD B missiles.

In the 1980's, Syria has worked hard to get longer ranged missiles. Some experts believe the purpose of this effort was two folds,(1) acquire strike range capability to counter Israeli nuclear weapons and (2) match Iraq's growing power and prestige in the region. The impact of the Gulf War on Iraq military power has eased some Syrian concern. It is unclear what Syria will do since their former Soviets supporters have been reluctant to help expand its CW capability. Some reports indicate that Syria is working with the Chinese to acquire longer range missiles such as the M-9. (2:147)

PERSIAN GULF STATES

Various sources indicate the Gulf states of Kuwait, Bahrain, Qatar, United Arab Emirates and Oman have shown no interest in acquiring weapons of mass destruction.

The country profiles just described illustrate that Middle East is no stranger to the development and use of chemical weapons. This sober reality suggests that world peace and regional stability are not possible if members of the Middle East community do not believe chemical disarmament has short and long term benefits for them.8

What impact does CWP in the Middle East have on U.S. national security interests? The 1991 and 1993 White House National Security Strategy Document provides the basis for the U.S. response toward Middle East instability caused by CWP.

NATIONAL SECURITY INTERESTS AND OBJECTIVES

The U.S. seeks global and regional stability. (I3:3) This objective is accomplished by pursuing the following supporting goals:

I. Protect the United States and its citizens from attack.

2. Honor, strengthen and extend historic collective treaty and defense arrangements.

3. Ensure no hostile power is able to dominate or control a region critical to our interests.

4. Work to avoid conflict by reducing sources of regional instability and violence. (I3:3)

U.S. officials believe limiting the proliferation of advanced military technology and weapons of mass destruction will avoid or reduce conflict in each hemisphere.

In the Middle East, the focus of U.S. security interests is on regional peace. The basic approach is to bring together regional and extra-regional governments in bilateral and multilateral negotiations to (I) resolve conflicts, (2) foster arms control and regional stability and promote economic cooperation. (I3:8)

The Gulf War and its aftermath have cemented U.S. support of Kuwait, Saudi Arabia, Egypt, other GCC states and Israel. U.S. billion dollar assistance p programs indicate that we believe that solutions to long term disputes are possible. The same goes for a lasting peace. This sounds good but U.S. assistance goes to support a

diversity of military capability among Israel's Arab neighbors as well as Israel itself. In that regard, how are U.S. interests served if the regional governments we support are actively involved in the proliferation of chemical weapons? Egypt, Saudi Arabia and Israel may not be guilty of the above, but there is clear evidence that several of their regional neighbors have great interest in chemical weapon technology. Consequently, the U.S. must pursue an appropriate chemical weapon disarmament strategy in the region because unrestrained chemical weapon proliferation could destablilize an already fragile peace in the region. An assessment of the dangers CWP poses to U.S. interests is essential in developing a pragmatic disarmament strategy.

THE REGIONAL DANGERS OF CHEMICAL WEAPON PROLIFERATION

" The proliferation of chemical, biological and nuclear weapons is rapidly becoming the most serious single threat to world peace." (2;1)

"CWP is best understood not as an isolated phenomenon, but as symptomatic of a significant change in the structural distribution of military power in the international system." (2:I7)

CWP is a threat to U.S. interest in the Middle East in five ways. First, CWP is a direct threat to international security. (8:45) Referred to as a poor man's nuclear weapon, some states in the region could be seduced into thinking that chemical weapons provide them with an equalizing military capability. Iran and Iraq have used chemical weapons in military conflict. Both countries have also indicated they will not eliminate their CW capability unless Israel eliminates its nuclear capability. Since no one expects Israel to agree to such conditions, tensions in the Middle East will remain high. Arab states believe they actually have a countervailing military capability to

Israel's dominance. Since the threshold of actual use has been crossed, there is no reason to believe other states won't use chemical weapons if severely threatened; internally as well as externally. Given Western commitments to Israel and other Arab states in the region, prolonged tensions will eventually lead to conflicts. Disruptions that effect the flow of oil and other natural resources could trigger destabilizing tensions around the world.

As the remaining superpower in the world, our involvement in regional politics is assumed because of our economic and military ties to many countries in the region. CWP forces the U.S. to characterize its regional involvement as a police force versus the more preferred role of peacemaker.

Second, CWP moves the Middle East away from the trend toward arms control instead of closer to it. (8:45) This is not a good development because arms proliferation gives countries more reasons not to support arms control even when it is in their national interests. U.S. decisions to provide advanced aircraft to Turkey, Egypt and Persian Gulf States could spur potential regional hegemons like Iran to seek greater military capability.

Discussions with Egyptian and Saudi Arabia defense officials indicate they each want to obtain the most advanced military capability possible. A major lesson these countries learned from the Gulf War was that well-trained personnel equipped with superb military arms using sound tactics will produce a successful fighting force.

Third, CWP encourages destabilizing U.S. arm sales in the region. It also drives a greater military presence to maintain the appropriate force balance and discourages a raunchavist power from attempting domination (e.g. Iran, Iraq). Ultimately, American

arm sales will undermine the prospect for meaningful arms control in the region. (II:II) In the post cold war era, the U.S. has center stage as the only superpower. Successful U.S. and Russian efforts to reduce strategic and conventional arms could lead the region into a new era of arms control. CWP in the Middle East has the potential to undermine broader international and multilateral intiatives to achieve world peace by limiting all weapons of mass destruction.

Fourth, CWP combined with ballistic missile proliferation makes it more difficult to evaluate the benefits of using chemical weapons in a conflict. (8:46) Middle East countries that have a limited response capability will be more likely to structure their response around chemical weapons as their only viable means of defense. New security arrangements could offer alternatives to military solutions based on the use of chemical weapons.

Fifth, CWP poses a threat to U.S. projection forces. Chemical weapons are deadly. These weapons include incapacitants which range from irritants such as tear gas to blister agents, cyanide compounds and toxins. Chemical weapons can remain active for a long time in the environment and pose mortal threats to exposed personnel. (6:6) U.S. air, land and sea based operations are vulnerable to chemical capabilities in the Middle East. (8:46) It is doubtful whether DOD budgets will be robust enough to build the kind of chemical defense structures needed to protect forces in garrison or in the field. The number of potential U.S. casualties will always emerge as a factor when employing American military forces in the region. Chemical weapons are inhumane. If war must be fought, then it should be fought as humanely as possible. The Geneva

Convention of 1925 suggests wars can and should be fought without chemical weapons. (7:2)

Given CWP, the U.S. should actively support all regional efforts to create a zone free of weapons of destruction such as that proposed by Egyptian President Mubarak's. He proposed that all states in the Middle East eliminate nuclear, biological and chemical weapons without exception. Given Egypt's historical role in CWP in the region, such an initiative should be supported by the U.S. and other developed countries.

In summary, CWP in the Middle East has grown significantly since the 1960's. Egypt's CW experience in the Yemen Civil War provided the embryonic influence that let to CW programs among the region's strongest military regimes. What has emerged is a new set of tensions characterized by the Gulf War. The U.S. should be very concerned about CWP, because it undermines U.S. national interest in the region.

Any successful effort to reduce CWP begins with an understanding of what key conditions or factors cause CWP.

FACTORS THAT CAUSE CWP

There are several key factors that practically fuel CWP. They are:

1. Technical barriers to chemical weapon production have eased. The internationalization of Petrochemicals, Pesticides and Pharmaceuticals have made chemical weapon production more accessible to all countries. Consequently such weapons are cheaper and easier to produce.

2. Delivery systems exist in larger numbers and are readily available. While conventional artillery has been a delivery system of choice, surface to surface

missile proliferation represents a new shift in preference. Table 1 shows how prominently ballistic missiles are becoming the delivery system of choice for those countries who possess chemical weapons. The most capable systems shown were built in the late 1980s. Iraq's fleet of missiles while not pinpoint weapons can cause significant collateral damage as well as casualties if chemical warheads are used.

3. Political barriers have eased. Iraq's use of chemical weapons during the war with Iran erased the taboo against using such weapons against populations. We now know that smaller countries will use whatever military capability they believe will deter and or defeat their enemies. Simply being a signator to arms control treaties does not mean a country will not use weapons of mass destruction.

4. Perceptual barrier against military effectiveness has fallen. Although Iraq's use of chemical weapons was not decisive, they were successful in defeating some Iran human wave assaults and advances. Iran's ineffective defense due to deficiencies in protective equipment made Iraq's success overrated. This type of weapon demonstration lowers the threshold against use.

5. Regional competition. CWP is another manifestation of the arms control issue. All states in the region see some form of military preparedness as a key element in maintaining their national survival. Several states in the region have obtained a CW capability to military parity with their neighbors .

6. Political Capital. Often referred to as the "poor man's atomic bomb," some Arab states believe the acquisition of chemical weapons gives them a military counterweight to Israel's nuclear capability as well as an influential voice in any

arms control regimes pushed by major countries outside the region. (9:I5-I7)

The best way to reduce CWP is to construct a strategy that does two things. First, the strategy must contain elements that specifically reduce the incentive to proliferate chemical weapons and (2) offer external security against hostile threats. The best approach to reduce CWP and provide a viable Middle East security strategy lies in the chemical weapon disarmament scheme outlined below.

Table 1. Comparitive Range and Lethality of Surface-to-Surface Missiles

(2:56-57)

SOURCE COUNTRY	TYPE	RANGE (Km)	WARHEAD PAYLOAD (Kg)	CEP OPERATNL (Meters)	WARHEAD TYPES
USSR	SS-1b/Scud A	130	900	1,800	N,CB
USSR	SS-1c/Scud B	290	900	1,600	N,CB
USSR	Scud C	450	550	2,200	N,CB
USSR	FROG-7	60-70	455	900	N,CB
USSR	SS-21	80-100	1,318-1,537	900	N,CB
USSR	SS-23	500	350	900	N,CB
EGYPT	IMP Scud	450-600	500	2,000	??
	CONDOR II	820-980	600-1,000	1,200	??
CHINA	M-9	200-600	2,200	700	N,CB
	M-11	650-850	500-1,000		C,B?
IRAN	Scud R-17E	290-320			C,B?
IRAQ	AL Husayn Scud C/D VARIANT	615	135-500	3,200	C,B?
	AL Abbas	920	390-500	4,800	C,B?
	TAMUZ	2,000	600-1,000	1,200	CW,B
	SOLID FUEL	1,800	1,000	1,200	CW,B
USSR	122M MRL M-1972	20.5	40 x 17	900	CW,B
	122 mm BM-21	20.5	40 x	900	CW,B
	140 mm BM-14/16	9.8	40 x	800	CW,B
	130 mm GUN	27.2	96		CW,B

U.S Regional Chemical Weapon Disarmament Strategy

The central theme of any U.S. CW disarmament strategy rests on the principle that reducing and not eliminating CWP is the primary objective. The best approach to achieve this goal is through a set of initiatives that reduces the incentive for a regional player to acquire and ultimately use chemical weapons. The elements of such a U.S. chemical disarmament strategy are outlined below.

I. Establish arms control agreements that address regional Arab and Non-Arab concerns regarding Israel's nuclear weapon capability. "Arms control agreements allow a state to reduce its own arsenal and cut its military budget while simultaneously reductions among its opponents ensure no erosion of its overall security." (10:10)

The primary focus of Arab security needs stem from two fears. First is the perceived threat Israel represents with its nuclear weapons. Second, is the threat posed by other potential Arab or non-Arab (e.g. Iran) hegemons. The consensus among experts on the region believe that no initiatives to reduce CWP cannot be successful without being part of a comprehensive arms control regime that includes conventional weapons, missile technology as well as other weapons of mass destruction. (5:165) Effective arms control is difficult to achieve, because the U.S. has been the major arms supplier in the region along with the former Soviet Union. However, U.S. military assistance to countries like Egypt, Saudi Arabia and Israel must evolve into an overall weapons acquisition scheme that does not create regional asymmetries that lead to imbalances. This would only fuel an arms race.

Two approaches the U.S. might pursue more aggressively than when they were first introduced are: (I) former President Bush's Middle East Arms Control Initiative, introduced in May 29, 1991 and (2) Egypt's President Hosni Mubarak's proposal to promote the creation of a nuclear-free zone in the Middle East.

Former President Bush's initiative would apply to the total Middle East and is intended to reduce the spread of nuclear, chemical, biological and conventional weapons. (3:56) This initiative recommends the creation of a global chemical weapons convention (CWC) that would commit all states in a region to the convention and its provisions. To date, the CWC is working toward obtaining its initial goal of 60 signatories.

The U.S. should press hard for the Middle East region to sign-up. The U.S. is committed to the unconditional destruction of its chemical weapon stockpiles and facilities. (12:921) This sets a very good example to other nations. Likewise, many of the former Soviet Republics want to do the same. However, the cost and process for doing it remains a challenge against more pressing economic problems facing them. Nevertheless, there is greater universal approval for CW disarmament than ever before.

Regarding Egypt's Nuclear Free Zone proposal, the focus is on all weapons of mass destruction and that no exceptions be made for any state. The attractive part of this proposal is its comprehensive approach and emphasis on compliance measures. The proposal's weakness is that some states in the region will not sign up if they can acquire a nuclear capability similar to Israel. Likewise Israel is unlikely to give up its nuclear capability in support of the initiative, Israel's official position is that their nuclear

weapons program should not be at issue because non use expresses their intentions clearly. Therefore, their Arab neighbors have nothing to fear. The Nuclear Free Zone proposal is problematic but it still represents an area of dialogue that could further the arms control and ultimately reduce CWP in the Middle East. In the long term, it is conceivable that a regional Intermediate Nuclear Forces Treaty may be the only solution to the concerns about nuclear armed states. (I:3II)

2. **Discourage regional competition in chemical weapons by providing security arrangements that preclude their use.** The notion of the "Poor man's atomic bomb" implies that states in the region enhance their security through the acquisition and potential determinant value of chemical weapons. The Gulf War showed that Iraq possessed the delivery systems that could employ chemical weapons but elected not to use them against overwhelming coalition forces. It seems reasonable that Sadaam Hussein was faced with a very complicated scenario in which he truly faced the wrath of the coalition and other of nations had he chosen to use his limited CW capability. He obviously could not afford to miscalculate and suffer the sure downfall of his regime.

The U.S. should work hard to establish viable regional security arrangements with each country in the region that does not threaten its internal stability or its sovereignty. This could mean varying levels of U.S. presence ranging from deployed military forces to no actual military presence at all. This approach will not by itself meet every country's security needs but agreeing to come to someone's defense in time of need is appealing. The bottomline is political disputes that can only be resolved by military means relies on American, host nation and coalition forces which would likely preclude the use of chemical weapons.

3. **Use economic incentives to discourage investment in CW production and use.** The most recent key economic indicators regarding Middle East countries show that both non-oil and oil producing countries have experienced varying degrees of economic decline over the past several years. This is especially true for the oil producing countries which saw the cost of the Gulf War rapidly deplete their cash reserves during a period when oil revenues were in decline as well.

Given the rapidly growing birth rate across the region and the internal government demands to meet the needs of their citizens, Middle East countries desperately need to invest their scarce currency into domestic areas versus defense expenditures. Table 2 shows how Egypt, Iraq, Israel, Jordan, Syria and Sudan represent examples of countries who have 20 percent inflation or higher and little or no real GDP growth. These countries should be responsive to multilateral economic incentives that will reward them for significantly reducing their current inventory of CW and pledging to severely limit future development of such weapons in the future. This approach is best characterized by the recent Jordanian proposal labeled "Arms-for-Debt Swap". Under this proposal, debt reduction would be linked to arms control. (II:9) The only drawbacks to this proposal is the penalty for backsliding. The approach may appear to work best if the creditors are governments versus private bankers. (I0:II)

4. **Broadly publicize the historical and contemporary history of using chemical weapons in military conflicts.** This information distributed throughout the region will help to educate a misinformed or uninformed public about the dangers of such weapons. The indecisive results inspite of large number of casualties in World War I,

small scale use over the next 47 years, ineffectual use and results during the Vietnam War and the primarily defensive use in the Iran-Iraq War shows that chemical warfare is an inefficient but very dangerous form of warfare . The primary benefit of such weapons has been to the defense against an ill-protected opponent. Such an information campaign should be conducted with or without government support. The point is that some authoritarian regimes may not want its citizens to receive such information for fear it would generate unwanted internal debate. Nevertheless, the Gulf War highlighted the threat of chemical warfare at home and abroad. While the risk of CW proliferation were obviously shown, the Gulf war showed the limited military and deterrent value of such weapons. (I2:92I)

5. Develop an array of political initiatives that can be used to penalize a country's regime from using chemical weapons outside the guidelines of the Geneva Protocols of 1925 (and Chemical Weapon Convention) if ever accepted. With the support from all signatory nations, the U.S. can successfully recommend such responses as military action, trade embargoes, economic restrictions and political isolation to discourage violations of protocol provisions. (4:7) It should be noted that under the current Geneva Protocol guidelines, a defensive use of CW would be permitted. There must be a political cost imposed on any country that acts to destabilize regional peace through the use of chemical weapons.

CONCLUSION

The U.S. wants a lasting peace in the Middle East region, because it is more vital to its national security interest. However, regional conflicts such as the Arab-Israel dispute centered on the Palestinian homeland /Israeli security dilemma, conflicts over natural resources(e.g., oil,water), repression of minorities and the struggle for hegemonic dominance threaten the attainment of long term peace in the region.

If and when peace fails, many countries will turn to their military instruments of power as the only means to resolve their badly strained differences. Given the Middle East arms buildup during and after the Gulf War, the potential for countries to use weapons of mass destruction is high. The Gulf War underscored this U.S. concern as the coalition forces prepared itself for the possibility that Sadaam Hussein would use chemical weapons in the war. Luckily, it did not happen, but the threat chemical weapons pose to the region remains high.

All of the above suggests the U.S. should work hard to discourage the use of chemical weapons in the region. The economic difficulties facing most of nations in the region demand more investment in the civilian versus defense sector of their economies. This path offers the best prospects for future economic growth and stability.

A U.S. regional CW disarmament strategy that discourages investment in chemical weapons would boost international security. Using an eclectic approach that recognizes the benefits of all forms of arms control, economic incentives, security guaranties, education about dangers of chemical weapons, political pressure and

punitive military action make work better than any single solution. Now is the time for the U.S. to act as new power centers emerge in the heavily armed Middle East.

Table 2. Key Indicators 1989/90 (15:1)

COUNTRY	POPULATN (m)	GDP per capita ($)	INFLATION (%)	GDP per real growth (%)	BALANCE OF TRADE (%)
BAHRAIN	0.49	9994 (2e)	1.5	6.7 (1)	-1,355
EGYPT	53	1219 (e)	21.3	-1.5 (2)	-9,909
IRAN	54.2	3405 (1,n)	22.4	-1.1 (1)	3,849
IRAQ	17.2(1)	2943 (2,e)	25.0 (2,e)	1.7 (2,e)	1,782
ISRAEL	4,050	9452 (!)	20.3	1.8 (1)	123
LIBYA	4.20 (1)	5559 (1)			-1726 (1)
OMAN	1.38 (1)	7590 (1)	0.0 (2)	-1.6 (3,n)	1,274
QATAR	0.42	15646 (1)	1.62 (2)	0.4 (2)	1,068
SAUDI ARABI	14.4	5535 (1,n)	1.1	0.0 (2)	6,303
SYRIA	11.7	1428 (1)	11.4	3.1	991
UNITED ARAB EMIRATES	1.50 (1)	15527 (1)	6.0 (2,e)	-2.1 (1)	

LIST OF REFERENCES

1. Kathleen C. Bailey, "Arms Control for the Middle East," International Review Defense Review, No. 4, 1991, pp. 311-314.

2. Anthony H. Cordesman, Weapons of Mass Destruction in the Middle East , 1991.

3. DISAM Journal, "FACT SHEET: Middle East Arms Control Initiative", Summer 1991.

4. Steven Fetter, "Ballistic Missiles and Weapons of Mass Destruction: What is the the threat ? What should be done ?, International Security Vol 16., No. 1 Summer 1991, pp. 5-42.

5. Shireen T. Hunter, "Persian Gulf Security: Lessons of the Past and the Need for New Thinking," SAIS Review, Winter-Spring 1992, pp. 155-166.

6. Harvey J. McGeorge, "The Growing Trend Toward Chemical and Biological Weapons Capability," Defense and Foreign Affairs, Strategic Policy, April 1991 pp. 5-6.

7. Julian Perry Robinson, Chemical Warfare Control: A Framework for considering policy alternatives. Stockholm International Peace Research Institute Chemical and Biological Warfare Studies, No. 2, 1985.

8. Brad Roberts, Chemical Disarmament and International Security, 1992.

9. Brad Roberts, Chemical Disarmament and U.S. Security, 1992.

10. Yahya Sadowski, "Sandstorm with a Silver Lining ?: Prospects for Arms Control in the Arab World, " The Brookings Review, Summer 1992, pp. 7-11.

11. Yahya Sadowski, "Scuds Versus Butter: The Political Economy of Arms Control in the Arab World," Middle East Report, July-August 1992, pp. 2-13,42.

12. Brigitte Sauerwein, "Chemical Weapons Convention--Window of Opportunity Slipping," International Defense Review, No. 9, 1991, pp. 921-922.

13. The White House, National Security Strategy of the United States, January 1993.

14. United States Congress. House Committe on Foreign Affairs. Subcommittee on Arms Control, International Security and Science, Chemical Weapons Proliferation, 1989.

15. Mohammed E. Ahrari, "Conflict and Change," Lecture Handout, Air War College, 12 April 1993.